SHORT COMMUNICATION

EXCEPTIONAL PRESERVATION IN CYCLOSTOME BRYOZOA FROM THE MIDDLE LIAS OF NORTHAMPTONSHIRE

by B. WALTER *and* H. P. POWELL

ABSTRACT. The genus *Cisternifera* Walford 1894 is shown to be based on a misinterpretation of *Mesenteripora wrighti* Haime 1854, with a calcified terminal membrane.

IN 1887 E. A. Walford described a small fauna of bryozoa from the Middle Lias Marlstone (Spinatum Zone, Pliensbachian) of King's Sutton, Northants. This collection which had been placed in the Oxford University Museum was thought to be lost, but recently it was rediscovered there amongst the Geological Collections, along with Walford's other type and figured bryozoa. The interest of the fauna lies in the fact that it is the oldest known from the Jurassic. Secondly it is of interest for the remarkable preservation of certain specimens, especially *Mesenteripora wrighti* Haime 1854 = *Cisternifera inconstans* (Walford 1887), as shown in Plate 20. In many of the colonies of this species the peristome is closed by a partition. This is depressed in the centre where it is pierced by a small round hole. Walford (1887, p. 633) observed this clearly, and he compared these partitions with movable opercula such as are encountered in the cyclostome suborder Salpingina. But later on (1894), comparing this partition to the frontal wall of cheilostomes, and anxious to demonstrate a relationship to the cheilostomes, he described avicularia and supra-oral ovicells, while the true ovicells, described in 1877, were now named cistern-cells, thus giving rise to the new generic name *Cisternifera*. Walter (1969) has already pointed out that *C. inconstans* shows all the characters of *Mesenteripora wrighti* Haime. Thanks to the discovery of Walford's material the original specimens have been re-examined. There are neither avicularia nor supra-oral ovicells but incompletely developed ovicells of cyclostome type and very many peristomial partitions. The partitions do not appear to show the variations (with two pores, with tubules, etc.) figured by Walford (1894). All the partitions are slightly depressed towards the centre and are pierced by a central circular pore. The study with the scanning electron microscope ($\times 350$; Pl. 20, figs. 3–6) shows that each partition has a ring of smaller pores, the pseudopores. A figure very similar to ours has recently been published by K. Brood (1972, pl. 3, fig. 2) for a modern cyclostome, *Diplosolen obelia*. It shows that the 'operculum' of *Cisternifera* is a terminal diaphragm secreted by the terminal membrane. Its presence in fossils is very exceptional and it presumably indicates a very calm environment. Furthermore the very short peristomes of *M. wrighti* would

[Palaeontology, Vol. 16, Part 1, 1973, pp. 219–221, pl. 20.]

favour its preservation; the ends of long peristomes are more likely to get broken. This could explain the absence of a terminal diaphragm in the other species from the same bed.

So it appears that the genus *Cisternifera* is founded on no more than the misinterpretation of the exceptionally well-preserved terminal diaphragm of *Mesenteripora wrighti* Haime. It can therefore no longer stand.

REFERENCES

BROOD, K. 1972. Cyclostomatous Bryozoa from the Upper Cretaceous and Danian in Scandinavia. *Acta Universitatis stockholmiensis*, **26,** 464 pp., 78 pls.

WALFORD, E. A. 1887. Notes on some Polyzoa from the Lias. *Q. Jl geol. Soc. Lond.* **43,** 632–636, pl. 25.

—— 1894. On Cheilostomatous Bryozoa from the Middle Lias. *Q. Jl geol. Soc. Lond.* **50,** 79–84, pls. 5–7.

WALTER, B. 1969. Les Bryozoaires jurassiques en France. *Docums Lab. Géol. Univ. Lyon.* No. 35, 328 pp., 20 pls.

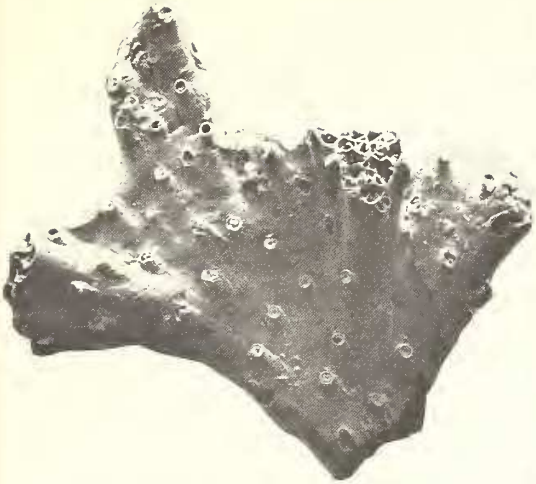
B. WALTER
Département des Sciences de la Terre
Université Claude-Bernard
Lyon
et Centre de paléontologie stratigraphique associé au C.N.R.S.

H. P. POWELL
Palaeontological Collections
University Museum
Oxford

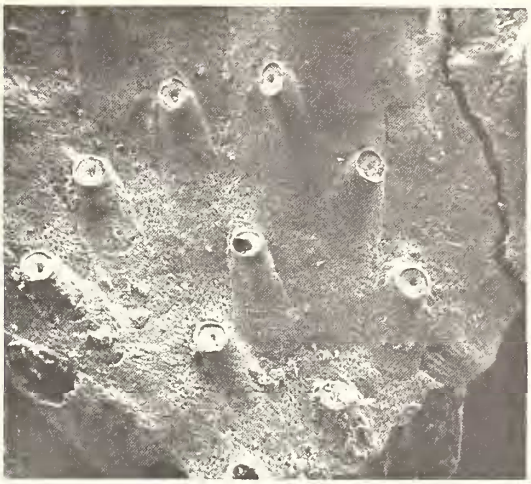
Typescript received 19 April 1972

EXPLANATION OF PLATE 20

Figs. 1–6. *Mesenteripora wrighti* Haime. Middle Lias, King's Sutton, Northamptonshire. Walford Collection, Oxford University Museum, No. J. 28600, Stereoscan micrographs. 1, 2, 3, and 5, using reflected electrons; 4 and 6 using secondary electrons. 1, Colony ×14. 2, Group of peristomes ×35. 3–6, Four peristomes showing the terminal membrane and central pore, ×350.

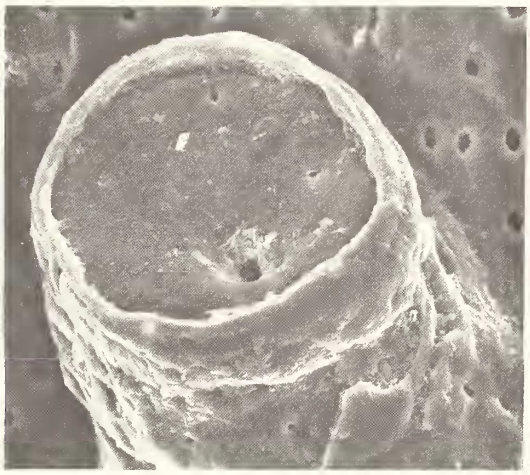


1



2

3



4

5

6

WALTER and POWELL, *Mesenteripora*